

# A NEW SPECIES OF *TETARRHENA* R. Br. (POACEAE) FROM VICTORIA AND NEW SOUTH WALES

by

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## ABSTRACT

Walsh, Neville G. A new species of *Tetrarrhena* R. Br. (Poaceae) from Victoria and New South Wales. *Muelleria* 7(1): 95–98 (1989). — *Tetrarrhena turfosa* is described as a new species with notes on distribution and ecology. Its relationship to other members of the genus is discussed.

## INTRODUCTION

In the course of preparing the account of Poaceae for a forthcoming Flora of Victoria, several apparently unnamed taxa have been encountered. The majority of these are in groups currently under study by others and should, in due course, be dealt with by them. The species described herein has long been recognised as being distinct but has evaded formal recognition. As it seems no specialists are presently dealing with *Tetrarrhena*, the opportunity is here taken to validate the status of a sixth member of the genus.

## TAXONOMY

*Tetrarrhena turfosa* N. G. Walsh, sp. nov.

*Gramen* perenne, rhizomatosum, caespitosum vel ascendens, 0.2–1.3 m altum. *Folia* erecta, laevia et glabra. *Vaginae* amplexicaules. *Ligulae* ciliatae, ad 0.5 mm longae. *Laminae* involutae, 2–7 cm longae, 0.3–0.8 mm latae, obtusae interdum inflatae apicibus. *Inflorescentia* racemosa, angusta, erecta, spicam simulans, 1–3 cm longa. *Spiculae* 3–10, subsessiles, saepe purpuratae, 4.8–6.8 mm longae. *Glumae* subaequales, ovatae, 1–2 mm longae. *Lemma* sterilis infernum longitudine circa  $\frac{2}{3}$  partes lemmatis sterilis superni, ambo oblongae, obtusae, carinatae vix, nervi 5–7 elevati manifeste, scabri. *Lemma* fertilis aequans fere lemma sterilem supernum, carinatum, scaberulum. *Palea* aequans fere lemma sterilem. *Antherae* quatuor, circa 3 mm longae.

**TYPUS:** Victoria — Western. Grid D 18. Grampians, 3 miles (6.4 km) SW. of Halls Gap, 0.15 miles (0.24 km) west of junction with Mt Rosea Track, along watercourse. Associated species include: *Pultenaea subumbellata*, *Sprengelia*, *Selaginella*, *Restio complanatus*, *Lepidosperma* spp. *Gymnoschoenus*, *Gahnia sieberiana*, 18.i.1969, *Beaglehole* 30309 (HOLOTYPUS: MEL 597060. ISOTYPI: AD, BRI, CANB, HO, NSW).

A rhizomatous, perennial grass, forming compact tufts, commonly to c. 0.6 m high in exposed sites, or with leafy, branched, ascending strands to 1.3 m high amongst taller vegetation. *Leaves* erect, smooth and glabrous. *Sheaths* tightly encircling stem. *Lamina* tightly involute, 2–7 cm long, 0.3–0.8 mm diameter, terminating in a blunt, sometimes slightly swollen tip. *Ligule* a ciliate rim to 0.5 mm long, sometimes with a few marginal hairs to 1 mm long. *Inflorescence* an erect, spike-like raceme 1–3 cm long. *Spikelets* 3–10 per raceme, 4.8–6.8 mm long, subsessile, often purplish. *Glumes* subequal, the upper usually slightly larger, ovate, 1.1–2 mm long, smooth and glabrous. *Lower sterile lemma* about  $\frac{2}{3}$  as long as upper, both oblong, blunt, hardly keeled, the 5–7 nerves prominently raised and scabrid. *Fertile lemma* almost equal to upper sterile lemma, keeled, uniformly scaberulous, obscurely 5–7 nerved. *Palea* about as long as lower lemma, membranous. *Anthers* 4, about 3 mm long. (Fig. 1).

**SELECTED SPECIMENS EXAMINED** (Total number examined 43):

New South Wales — Barrington Tops, swamps and grasslands, 7.i.1934, *Vickery* (NSW 115676).

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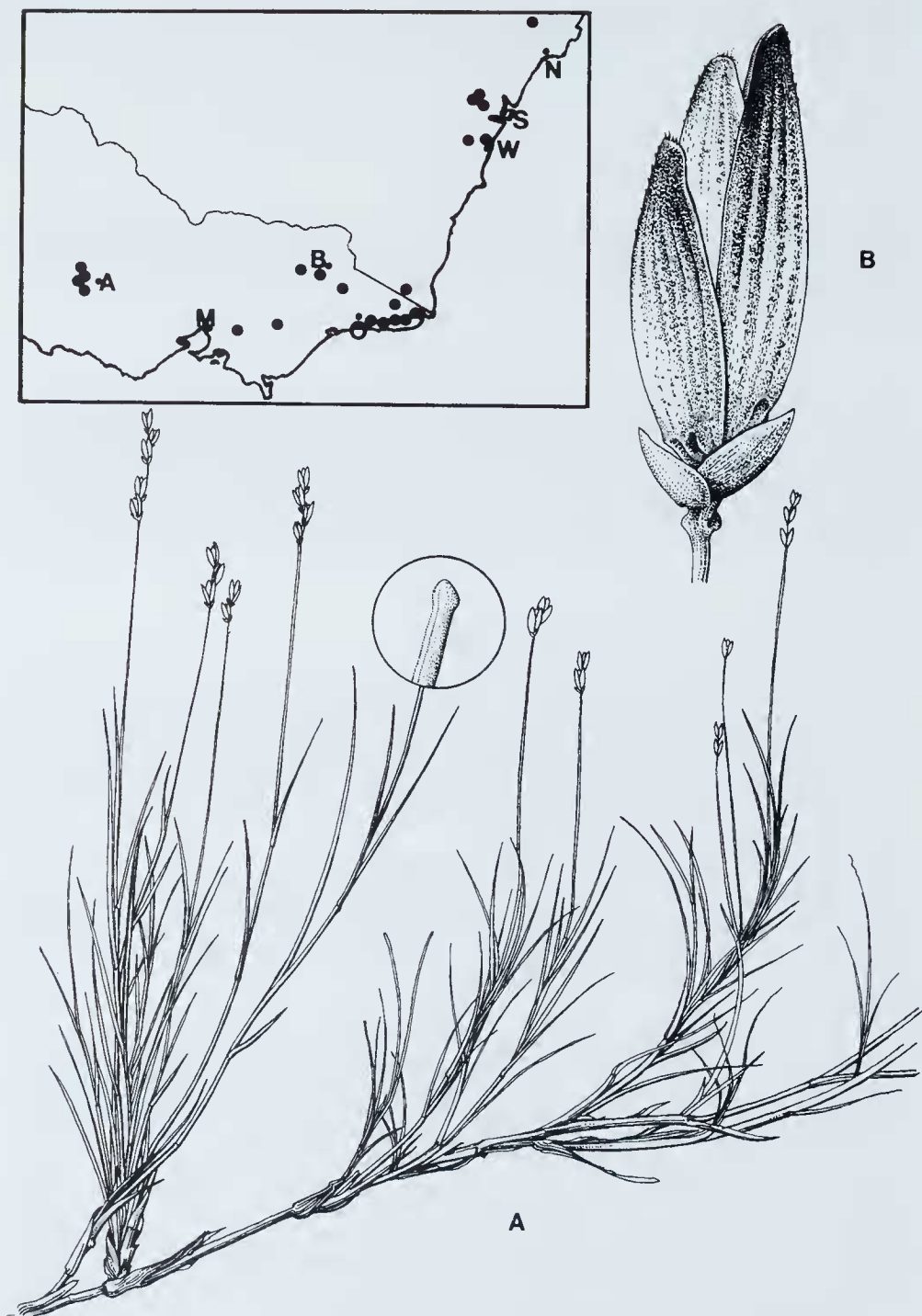


Fig. 1. *Tetrarrhena turfosa*. a — habit,  $\times \frac{1}{2}$ ; inset — leaf tip  $\times 5$ . b — spikelet  $\times 10$ , from Beauglehole 30309 (type). Inset — distribution of *T. turfosa* (n.b. each dot may represent more than one collection); places represented are A = Ararat, M = Melbourne, B = Mt. Bogong, O = Orbost, W = Wollongong, S = Sydney, N = Newcastle.

Centennial Park, vi.1897, *Camfield s.n.* (NSW 115689). Katoomba, swampy places, alt. 3100 ft, 22.i.1939, *Blake 13920* (NSW 115671). Bridal Veil Falls, Blackheath, alt. 3450 ft, *Constable s.n.* (NSW 56320). 1.5 miles N. of Hilltop near Mittagong, 6.ii.1965, *McBarron 10538* (NSW 115680).

Victoria — Mt Buffalo, Crystal Brook, near 'Tucker Box' corner, 21.ii.1963, *Willis s.n.* (MEL 113885). Bogong High Plains, 20.i.1940, *Patton s.n.* (MEL 597061). Nunniong Plateau, c. 0.5 ml. SW. of Reedy River Chasm, 3.ii.1973, *Beaglehole 41349* (MEL 527466). Malleco-Wingan coast, 0.9 ml. NE. of Little River Mouth, 22.xii.1969, *Beaglehole 32695* (MEL 564478). Erica district, beside Beynons Road, c. 3 km south of Morgans Mill, 10.i.1980, *Scarlett 80-3* (MEL 596706).

#### DISTRIBUTION AND CONSERVATION STATUS (Fig. 1):

Occurs mostly on and seaward from the Dividing Range from as far north as the Barrington Tops area in New South Wales south to the Victorian border and west to the Grampians in south-western Victoria. The species is locally common in appropriate habitats, although some populations (e.g. near Mt Wog Wog in south-eastern NSW, and subalpine to subalpine sites in Victoria) are disjunct and would appear to be quite small. Fortunately the species is well reserved in national parks in both states and its conservation status is therefore considered to be secure.

#### ECOLOGY:

The grass is invariably associated with heathy and sedge-rich vegetation in swamps and fringing watercourses from near sea-level in eastern Victoria to subalpine situations (to c. 1650 m) in both states. Soils are typically sodden and peaty, chiefly derived from or formed upon sandstone, but on Mt Buffalo and the Bogong High Plains the parent materials are granite and basalt respectively. Commonly associated plants are typified by those species accompanying the type collection, i.e. with strong representation of the Epacridaceae, Cyperaceae, Restionaceae and, particularly at higher altitudes, *Sphagnum* mosses. The main flowering and fruiting period is from November to February.

#### NOTES:

*T. turfosa* is the taxon first recorded as an apparently undescribed species by Willis (1970) and subsequently by Beaglehole (1980) and Forbes and Ross (1988) as *Tetrarrhena* sp. It would appear to be most closely allied to *T. acuminata* R. Br. (near which it occasionally occurs) and the recently described *T. oreophila* D. I. Morris of Tasmanian alps and subalps to which it bears a strong superficial resemblance. From *T. acuminata*, it differs primarily in the shorter (<7 mm) spikelets, the obtuse, not acuminate sterile lemmas and the smooth, inrolled, not scabrous or flat leaf blades.

From *T. oreophila* it is distinguished by the obtuse, strongly scabrous and prominently 5–7 nerved sterile lemmas, in contrast to those of the Tasmanian endemic which are acute to acuminate, minutely scaberulous or almost smooth and lacking prominent nerves.

Material of *T. turfosa* at NSW had been segregated as an ecological variant of *T. juncea* R. Br. Examination of the types from BM and K (including the type of *T. tenacissima*, a later synonym), and all specimens of *T. juncea* at MEL and NSW confirms that there is no continuity of variation from that species to *T. turfosa*. *T. juncea*, a forest species, is infamous for its harshly scabrous, leaves and wiry stems and differs otherwise from *T. turfosa* in its relatively longer glumes, and more tapered, virtually smooth lemmas. Both *T. juncea* and *T. oreophila* are atypical in the genus (and belie the feature on which the generic name is conferred) in possessing 6 and 2 (or 1) anthers respectively rather than the 'typical' tetrandrous condition.

The two other species of *Tetrarrhena* are *T. laevis* R. Br., confined to the south-west of Western Australia and *T. distichophylla* R. Br., which typically has pubescent spikelets and leaves and is a species of poor, dryish country in southern Victoria, south-eastern South Australia and Tasmania.

The specific epithet '*turfosa*' (from a peat bog) pertains to the species well-defined preference of habitat.

## ACKNOWLEDGEMENTS

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# FERDINAND MUELLER, GOVERNMENT BOTANIST: THE ROLE OF WILLIAM HOOKER IN HIS APPOINTMENT

by

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## ABSTRACT

Cohn, Helen M. Ferdinand Mueller, Government Botanist: the role of William Hooker in his appointment. *Muelleria* 7(1): 99-102 (1989) — Contemporary commentary makes no mention of William Hooker being involved in Mueller's appointment as Government Botanist in Victoria. The only obituary that makes this claim is unreliable. Later writers offer no support for their contention that Hooker recommended Mueller for the post. Circumstances of Mueller's training, early emigration to Australia and botanical researches in Australia before settling in Victoria suggest that the possibilities for him to have established any connection with Hooker were too limited for Hooker to be in a position to recommend him. The Colonial Office disclaimed official knowledge of Mueller's appointment, an unlikely occurrence had Hooker been involved. Statements made by Mueller and Hooker themselves confirm that Hooker had no role in Mueller's appointment.

## INTRODUCTION

It is generally believed that Ferdinand Mueller's appointment by Charles La Trobe to the position of Government Botanist to the Colony of Victoria in 1853 was at the recommendation of Sir William Hooker, then Director of the Royal Botanic Gardens, Kew. This would not have been unusual or unexpected given Hooker's position of influence with regard to the placement of suitably qualified people in colonial botanical posts. However, an examination of contemporary and later writings reveals little ground to support this contention. Similarly, the circumstances of Mueller's early career suggest that it was most unlikely that Hooker made any such recommendation.

## BIOGRAPHICAL SOURCES

There are very few contemporary biographical notes about Mueller which shed any light on this question. Mueller was extremely reticent about himself, his letters and publications being confined almost exclusively to his work. It was left to other people to make public the details of his career. Among the earliest general biographical notes is that written by Joseph Knapp (1877). In it he states: 'In demselben Jahre [1852] folgte er dem Rufe des Gouverneurs C. Latrobe als Regierungs-Botaniker der Colonie Victoria in den Staatsdienst . . .'. No mention is made here of any intercession on the part of William Hooker.

On Mueller's death in 1896 a large number of obituaries and memorial notices was published. These also are remarkably silent on the circumstances of Mueller's appointment. Baldwin Spencer, Professor of Biology at the University of Melbourne and like Mueller one of the leading figures in the still small world of Victorian science, wrote from personal acquaintance with Mueller (Spencer 1896). Spencer makes no mention of William Hooker but gives La Trobe all the credit: 'Evidently his reputation as a botanist had preceded him, for in the same year Governor Latrobe appointed him Government Botanist . . .'. Other memorialists, like Spencer, credit Mueller's appointment solely to La Trobe (Battye 1897; Warburg 1897), or make no mention of the underlying reasons (McOwan 1896; Anon. 1896).

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The only obituary that attributes to William Hooker any role in Mueller's appointment is that written by William's son Joseph, his successor as Director at Kew (Hooker 1897). In it he says:

Among his [Mueller's] English correspondents was Sir W. Hooker, who interested himself in his favour with Mr Goulburn, then on the point of leaving England as Lieutenant-Governor of Victoria, and who was desirous of having the vegetable resources of that colony turned to the best account. This resulted in the creation of a Department of Botany in the Public Service of Victoria, and the appointment of Mueller to its directorship.

No 'Mr Goulburn' occupied any senior position in the Victorian Civil Service at that time. It seems probable that Joseph Hooker was referring to Frederick Goulburn who came to the colonies as Colonial Secretary (not Lieutenant-Governor) to New South Wales (not Victoria) and died in 1837. There are other errors of fact in the obituary: Mueller is said to have arrived in Victoria from South Australia in 1848 (the actual date was 1852) expressly to visit the Victorian alps, and to have been one of the three founders of the Royal Society of Victoria. The Society came into being from the amalgamation of two earlier societies having between them a total of 21 founding members. In 1897 when he wrote this tribute to Mueller, Joseph Hooker was 80 years old, trusting to his memory to recall events of 45 years previously. Joseph Hooker cannot be considered a reliable witness to his father's role in Mueller's appointment.

Later biographers unequivocally state that William Hooker was involved in Mueller's appointment. Mueller was variously said to have been 'well accredited by the eminent botanist, Sir William Hooker' (Daley 1924: 26) and 'recommended' by him (Hardy 1945), and La Trobe to have been 'persuaded' by Hooker to appoint Mueller (Roach 1921). The two major biographies of Mueller claim that Hooker had 'spoken highly of the merits of Dr Ferdinand Mueller' (M. Willis 1949: 19), and that approval of the appointment lay with Hooker (Kynaston 1981: 80). Other writers have simply followed suit, for example J. Willis (1971) and Powell (1982). However not one of these writers offers any supporting evidence.

#### MUELLER IN EUROPE

It is highly unlikely that William Hooker knew very much about Mueller at the time of his appointment. Mueller left Germany at the age of 22, having just qualified and having had little if any time to establish a reputation for himself outside his own country. His outward journey to South Australia on the 'Herrmann von Beckerath' seems to have offered him no opportunity to meet either of the Hookers or any of the other leading botanical personalities in England, so that he was virtually unknown to the British botanical establishment. For the first five years of his time in Australia before settling in Victoria, the specimens and papers he sent back to Europe were to his German colleagues rather to anyone in England. This is reflected in the pattern of his early publications.

By the end of 1853 Mueller's European publications comprised eight papers in German scientific journals and only two in England (Churchill, Muir & Sinkora 1978 & 1984). Taking into account the length of time for mail to reach Europe and the vagaries of the editorial and publication process, publications in Europe or England in 1853 represent work done some time before that. In the absence of any scientific publishing outlet in the Australian colonies, Mueller had naturally turned to the contacts he had at home to assist with the publication of his scientific researches.

The two papers published in England were actually translations of papers published in Germany in the same year (Mueller 1853c & 1853d). They appeared in William Hooker's own *Journal of Botany and Kew Garden Miscellany* (Mueller 1853a & 1853b). However, they were not sent to Hooker. Rather they were sent to Richard Kippist, then Librarian to the Linnean Society of London, who translated them from German and read them to meetings of the Society on the 7th and 21st December 1852 respectively. Hooker had an unhappy history of publishing a succession of journals which struggled and finally collapsed under the weight of a small buying public,

dwindling copy and heavy production costs (Brock 1980). It is not hard to see why he would have seized the opportunity to print these two short papers in the fourth and last of his journals. What is clear from this is that Mueller at that point had no thought of relying on Hooker as he did on his German contacts.

Even had William Hooker been well acquainted with Mueller it is unlikely he would have recommended him ahead of a British botanist. Throughout his career at Kew Hooker was instrumental in placing British botanists in key botanical posts, all of which were official, all over the world. In this he took his 'right' of patronage very seriously. There is the celebrated case of Charles Moore, who was appointed to the Botanic Gardens in Sydney ahead of Hooker's own nominee and to Hooker's considerable disgust (Gilbert 1986). His influence in colonial botanical matters was well known. G. W. Francis at the Adelaide Botanic Gardens appealed to Hooker for support should rival claims be made for his job as Director there (Best 1986).

### COLONIAL APPOINTMENT

Finally, had William Hooker recommended or approved Mueller's appointment the necessary correspondence would have passed through the Colonial Office in London. Minuted on a letter from Governor Hotham to the Colonial Office dated 31st January 1855 is the following revealing comment:

I do not recall that Dr Mueller's name ever came officially before this Department before. He is here styled Government Botanist, and he certainly was appointed in the Colony. I recollect, however, Mr La Trobe mentioning Dr Mueller very favorably in a private letter. He would be able to furnish any information regarding Dr Mueller. (CO 309 v.31 204)

The most positive indication that William Hooker played no part in Mueller's appointment comes from Mueller himself. He introduced himself to Hooker in a letter dated 3rd February 1853, a mere seven days after being appointed Government Botanist. He had already embarked on the first of his exploring journeys through Victoria.

As a highly esteemed promoter of botanical science throughout the world, you will, I trust, Sir William, not without some interest receive the intelligence, that his Excell. our scientific Governor Latrobe has been pleased to entrust to me the newly created office of a government botanist for this province, an appointment that I joyfully accept, as it now enables me at length to devote my time henceforth exclusively to the study of the indigenous plants . . . Of my botanical labours in South Australia, I suppose little came to your notice . . . (Kew Correspondence v.74, 135)

Hooker replied that he was 'most agreeably surprised' to have received the 'welcome intelligence' of his engagement by the government. 'This is exactly as it should be and I shall write to the Governor by this day's post to thank him for his service thus rendered to our favourite science' (Argus 31.10.1853 p. 5).

### ACKNOWLEDGEMENTS

The letter from Mueller to William Hooker is quoted with permission from the Royal Botanic Gardens, Kew.

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